

CLAIMS

We claim:

- 1 ~~1.~~ A computerized system for designing, deploying, modifying, or
2 maintaining a communications network, comprising:
3 a computer generated model of a physical environment in which
4 said communications network is or will be deployed, said computer
5 generated model providing a three-dimensional representation of locations
6 of components within said physical environment;
7 a server computer or computers for running a computer program
8 which generates said computer generated model;
9 at least one portable computer which acts as a client to said server;
10 means for downloading and storing at least a portion of said
11 computer generated model from said server to said portable computer for
12 displaying said three dimensional representation on said portable
13 computer; and
14 a display associated with said portable computer for displaying said
15 three dimensional pictorial representation.
- 1 2. The computerized system of claim 1 wherein said portable computer is
2 a hand-held computer.
- 1 3. The computerized system of claim 1 wherein said three-dimensional
2 representation is constructed from a collection of two-dimensional
3 representations.

009628506-072800

1 8. The computerized system of claim 1 wherein said components are
2 selected from the group consisting of base stations, base station
3 controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic
4 cabling, connectors, splitters, repeaters, transducers, converters, couplers,

1 ~~13~~ A computerized system for designing, deploying, modifying, or
2 maintaining a communications network, comprising:
3 a computer generated model of a physical environment in which
4 said communications network is or will be deployed, said computer
5 generated model providing a representation of locations of components
6 within said physical environment, and wherein said computer generated
7 model provides for performance prediction of said communications
8 network based on factors selected from the group consisting of choice of
9 components to be used within said environment, choice of locations for

10 said components with said environment, and orientation of said
11 components at said locations;
12 a server computer or computers for running a computer program
13 which generates said computer generated model;
14 at least one portable computer which acts as a client to said server;
15 means for downloading and storing at least a portion of said
16 computer generated model from said server to said portable computer for
17 displaying said representation on said portable computer; and
18 a display associated with said portable computer for displaying said
19 representation and said performance prediction results.

1 14. The computerized system of claim 13 further comprising:

2 a means for inputting changes to said factors for said at least a
3 portion of said computer generated model on said portable computer
4 which is downloaded from said server; and
5 a means for uploading said changes to said server.

1 15. The computerized system of claim 13 further comprising:

2 a means for inputting changes to said factors for said at least a
3 portion of said computer generated model on said portable computer
4 which is downloaded from said server; and
5 a means for outputting predicted performance parameters of said
6 communications network based on said inputted changes on said display
7 of said portable computer.

1 16. The computerized system of claim 13 wherein said communications

008270-90582960

1 17. The computerized system of claim 13 wherein said portable computer
2 is a hand-held computer.

1 19. The computerized system of claim 13 wherein said representation is
2 constructed from a collection of two-dimensional representations.

21. The computerized system of claim 20 wherein said representation
includes a plurality of floor plans for a plurality of floors in said building,
and wherein said portable computer includes a means for selecting specific
floor plans of said plurality for displaying on said display.

22. The computerized system of claim 13 wherein said physical environment is a campus of buildings and said representation includes at least one floor plan for each of a plurality of buildings in said campus, and wherein said portable computer includes a means to select a building within said campus of buildings and to display said at least one floor plan for said building selected.

1 23. The computerized system of claim 22 wherein said pictorial
2 representation includes a plurality of floor plans for a plurality of floors for
3 said building selected.

1 24. The computerized system of claim 13 wherein said components are
2 selected from the group consisting of base stations, base station
3 controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic
4 cabling, connectors, splitters, repeaters, transducers, converters, couplers,
5 leaky feeder cables, hubs, switches, routers, firewalls, power distribution
6 lines, copper wiring, twisted pair cabling, and wireless access points.

1 25. The computerized system of claim 13 wherein said physical
2 environment is an outdoor area having three dimensional topology and
3 said pictorial representation includes a representation of said three
4 dimensional topology.

1 26. The computerized system of claim 13 wherein a position-tracking
2 device is used to determine position within said physical environment.

1 27. The computerized system of claim 13 wherein said communication
2 network components are maintained in a bill of materials.

1 ~~28.~~ A computerized system for designing, deploying, modifying, or
2 maintaining a communications network, comprising:
3 a computer generated model of a physical environment in which

008220" 90582960

1 32. The computerized system of claim 28 further comprising a means for
2 uploading and downloading said performance measurements from said
3 portable computer to another computer which is different from said server.

1 33. The computerized system of claim 32 wherein said means for
2 measuring is a measurement device connected to said portable computer.

1 34. The computerized system of claim 28 further comprising:
2 a means for inputting changes to at least a portion of said computer
3 generated model on said portable computer which is downloaded from
4 said server, said means for inputting being positioned on said portable
5 computer; and
6 a means for uploading said changes to said server.

1 35. The computerized system of claim 28 further comprising:
2 a means for inputting changes to at least a portion of said computer
3 generated model on said portable computer which is downloaded from
4 said server, said means for inputting being positioned on said portable
5 computer; and
6 a means for outputting predicted performance parameters of said
7 communications network based on said inputted changes on said display
8 of said personal computer.

1 36. The computerized system of claim 28 wherein said communications
2 network includes wireless communication devices.

009628506 "07:2800

1 37. The computerized system of claim 28 wherein said portable computer
2 is a hand-held computer.

38. The computerized system of claim 28 wherein said representation is
three dimensional.

39. The computerized system of claim 38 wherein said representation is
constructed from a series of two dimensional representations.

1 40. The computerized system of claim 28 wherein said physical
2 environment is a building and said pictorial representation includes at least
3 one floor plan of said building.

41. The computerized system of claim 40 wherein said representation
includes a plurality of floor plans for a plurality of floors in said building,
and wherein said portable computer includes a means for selecting specific
floor plans of said plurality for displaying on said display.

42. The computerized system of claim 28 wherein said physical environment is a campus of buildings and said representation includes at least one floor plan for each of a plurality of buildings in said campus, and wherein said portable computer includes a means to select a building within said campus of buildings and to display said at least one floor plan for said building selected.

4 said server, said means for inputting being positioned on said portable
5 computer; and
6 a means for uploading said changes to another portable computer
7 that is different from said server.

1 49. The computerized system of claim 28 further comprising:
2 a means for inputting changes to at least a portion of said computer
3 generated model on said portable computer which is downloaded from
4 said server, said means for inputting being positioned on said portable
5 computer;
6 a means for uploading said changes to said server; and
7 a means for displaying and storing said changes at said server.

1 50. The computerized system of claim 28 further comprising:
2 a means for inputting changes to at least a portion of said computer
3 generated model on said portable computer which is downloaded from
4 said server, said means for inputting being positioned on said portable
5 computer;
6 a means for uploading said changes to another portable computer
7 that is different from said server; and
8 a means for displaying and storing said changes at said another
9 portable computer.

add
AI

008220-90582960